

REMARKS

I. Introduction

Claims 16 and 19-25 are pending in the present application. Claims 16, 21, 22 and 24 have been amended. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Rejection of Claims 16, 19, and 21-25 Under 35 U.S.C. § 103(a)

Claims 16, 19 and 21-25 were rejected under 35 U.S.C. § 103(a) as unpatentable over Pontoppidan (U.S. Patent No. 6,267,307) in view of Fedorovich (Soviet Union Published Patent Application No. 775364B).

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

The previously pending version of claim 16 clearly recited **two separate components** that define the valve opening end of the fuel injector: a fixed valve seat; and a component in the downstream valve end that includes a fuel outlet. This features may be seen clearly in Fig. 5, for example. (See spray-discharge member 67 arranged downstream of valve-seat element 26). In order to highlight this fact, claim 16 has been amended to recite, in relevant parts, “a fixed valve seat element to cooperate with the valve-closure member . . . ; and a downstream valve end including an outlet component . . . , wherein: the fuel outlet includes at least one discharge orifice of the outlet component, the at least one discharge orifice is arranged downstream of the fixed valve seat element, the outlet component includes a coating around the at least one discharge orifice, including at least in an immediate exterior of an outlet area of the at least one discharge orifice.” Since the amendments merely emphasize the inherent separateness of the previously recited components, the amendments do not add any new matter or raise any new issues.

In contrast to the above-recited features of amended claim 16, neither Pontoppidan nor Fedorovich teaches or suggests “a fixed valve seat element to cooperate with the valve-closure member” and a separate downstream “outlet component” that includes at least one discharge orifice. As clearly shown in Figs. 2 and 3 of Pontoppidan, valve seat 8 and “kink” 12 are different surface sections of a single component, i.e., bead 6, which surface sections connect the orifice 7. (See also col. 4, l. 30-32: “downstream of this orifice 7, a kin 12 is machined into the external face 6b of the bead 6 and around the outlet orifice 7”). In addition, nothing in Fedorovich even remotely suggests “a fixed valve seat element to cooperate with the valve-closure member” and a separate downstream “outlet component” that includes at least one discharge orifice.

For at least the foregoing reasons, claim 16 and its dependent claims 19 and 21-25 are not rendered obvious by the combination of Pontoppidan and Fedorovich.

Independent of the above, with respect to dependent claims 21-25, nothing in either Pontoppidan or Fedorovich suggests that “the outlet component,” which is separate from the fixed valve seat and includes the discharge orifice, has a coating of fluorosilicate around the discharge orifice. For at least this additional reason, dependent claims 21-25 are not rendered obvious by the combination of Pontoppidan and Fedorovich.

Accordingly, claim 16 and its dependent claims 19 and 21-25 are allowable over the combination of Pontoppidan and Fedorovich.

III. Rejection of Claim 20 Under 35 U.S.C. § 103(a)

Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Pontoppidan in view of Fedorovich, and in further view of Komaroff (U.S. Patent No. 4,397,283). Applicants respectfully submit that claim 20 is patentable over the combination of Pontoppidan, Fedorovich and Komaroff for the following reasons.

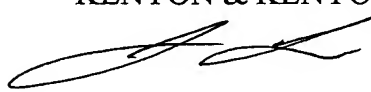
Claim 20 depends on claim 16. In addition, Komaroff merely relates to an ignition onset sensor for internal combustion engines, and Komaroff does not cure the deficiency of the combination of Pontoppidan and Fedorovich as applied against parent claim 16. Accordingly, it is respectfully submitted that dependent claim 20 is patentable over the combination of Pontoppidan, Fedorovich and Komaroff.

IV. Conclusion

It is therefore respectfully submitted that all of the presently pending claims 16 and 19-25 are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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